

IN THE CLAIMS

Please preliminarily amend the claims as follows:

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1. (Currently amended) In a data processing system ~~having~~ including a plurality of processors each directly coupled via a system memory bus ~~and having~~ wherein a first processor of said plurality of processors ~~with~~ contains a level one cache memory ~~responsively~~ directly coupled to a level two cache memory which is ~~responsively~~ directly coupled to a level three memory, said level two cache memory ~~having~~ containing cache storage and tag storage and ~~having~~ containing a circuit for SNOOPing said system memory bus, the improvement comprising:

A first dedicated path between said system memory bus and said cache storage and a second dedicated path between said system memory bus and said tag storage.

2. (Currently amended) A data processing system according to claim 1 further comprising control logic ~~responsively~~ directly coupled to said cache storage and said tag storage which provides the highest priority for said SNOOPing.

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3. (Previously presented) A data processing system according to claim 2 wherein said level two cache memory further comprises:

A duplicate tag memory.

4. (Previously presented) A data processing system according to claim 3 wherein said plurality of processors further comprises

A plurality of instruction processors.

5. (Previously presented) A data processing system according to claim 4 wherein said level three memory further comprises:

A level three cache memory.

6. (Currently amended) A data processing system comprising:

a. A plurality of processors including a first processor ~~having~~ containing a level one cache memory;

b. A level two cache memory ~~having~~ containing a data memory and a tag memory ~~responsively~~ directly coupled to said level one cache memory;

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d. A system memory bus ~~responsively~~ directly coupled to said plurality of processors and ~~responsively~~ directly coupled to said data memory and ~~responsively~~ directly coupled to said tag memory; and

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d. A SNOOP request placed on said system memory bus and ~~responsively~~ directly coupled to said tag memory.

7. (Previously presented) A data processing system according to claim 6 further comprising:


A data request transferred from said level one cache memory to said level two cache memory.

8. (Previously presented) A data processing system according to claim 7 further comprising:

Control logic within said level two cache memory which provides priority of said SNOOP request over said data request.

9. (Previously presented) A data processing system according to claim 8 further comprising:

a. A level one tag memory located within said level one cache memory; and

msd  b. A duplicate tag memory within said level two cache memory which maintains a duplicate of information within said level one tag memory.

Q 10. (Currently amended) A data processing system according to claim 9 wherein said SNOOP request is ~~responsively~~ directly coupled to said duplicate tag memory.

11. (Currently amended) A method of maintaining validity of data within a level one cache memory of a processor having a level one tag memory ~~responsively~~ directly coupled to a level two cache memory ~~having~~ containing a tag memory and a data memory wherein said level two cache memory is ~~responsively~~ directly coupled to a system memory bus comprising:

- a. Formulating a SNOOP request;
 - b. Presenting said SNOOP request on said system memory bus to said level two cache memory;
 - c. Routing said SNOOP request directly to said tag memory;
- and
- d. Processing said SNOOP request.

12. (Original) A method according to claim 11 further comprising:

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- a. Presenting a data request from said level one cache memory to said level two cache memory; and
 - b. Granting priority to said SNOOP request over said data request.

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13. (Previously presented) A method according to claim 12 further comprising:

Maintaining a duplicate copy of said level one tag memory within a duplicate tag memory within said level two cache memory.

14. (Previously presented) A method according to claim 13 further comprising:

Routing said SNOOP request to said duplicate tag memory.

15. (Previously presented) A method according to claim 14 further comprising:

Processing said SNOOP request regarding said duplicate tag memory.

16. (Currently amended) An apparatus comprising:

- a. Means for executing program instructions;
- b. Means ~~responsively~~ directly coupled to said executing means for level one caching data;

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c. Means ~~responsively~~ directly coupled to said executing means and said level one caching means for requesting a data element if said executing means requires requesting of said data element and said level one caching means does not contain said data element;

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d. Means ~~responsively~~ directly coupled to said requesting means for level two caching;

e. Means located within said level two caching means for storing level two caching data;

f. Means located within said level two caching means for maintaining level two tags; and

g. Means ~~responsively~~ directly coupled to said maintaining means for directly SNOOPing said level two tags.

17. (Currently amended) An apparatus according to claim 16 further comprising:

a. Means ~~responsively~~ directly coupled to said storing means and said maintaining means for granting priority to a SNOOP request over said data element request.

18. (Currently amended) An apparatus according to claim 17 further comprising:

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a. Means ~~responsively~~ directly coupled to said level two caching means for bussing system memory data;

b. Means ~~responsively~~ directly coupled to said bussing means for interfacing said bussing means directly to said storing means; and

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c. Means ~~responsively~~ directly coupled to said bussing means for interfacing said bussing means directly to said maintaining means.

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19. (Currently amended) An apparatus according to claim 18 further comprising:

a. Means located within said level one caching means for recording level one tags; and

b. Means located within said level two caching means and ~~responsively~~ directly coupled to said recording means for duplicating said level one tags.

20. (Currently amended) An apparatus according to claim 16 further comprising:

a. Means ~~responsively~~ directly coupled to said bussing means and said duplicating means for SNOOPing said duplicating means.